

SEQUENCE LISTING

<110> BIOPROTEIN TECHNOLOGIES
 COHEN Jean, deceased
 SOLER Eric
 HOUEBINE Louis-Marie
 SCHWARTZ-CORNIL Isabelle
 FOURGEUX Cynthia
 PAREZ Nathalie
 GARBARG-CHENON Antoine

<120> PREPARATION OF RECOMBINANT ROTAVIRUS PROTEINS IN MILK OF
 TRANSGENIC NON-HUMAN MAMMALS

<130> D21684

<140> PCT/IB2005/000896

<141> 2005-03-04

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<151> 2004-03-04

<160> 23

<170> PatentIn version 3.3

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taa

2643

<210> 6

<211> 2797

<212> DNA

<213> Artificial sequence

<220>

<223> VP2 strain RF open reading frame, modified sequence
and with signal peptide

<400> 6

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tgataaatatg	cgcattcatga	acgagctgta	agcgcg			2797

<210> 7
 <211> 783
 <212> DNA
 <213> Porcine rotavirus

<220>
 <223> VP4 gene for capsid protein, partial cds

<400> 7
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 cctgggtccat tcgcacaaac aggttacgca ccagttaatt ggggagcagg tgagactaat 120
 gactccacaa ctgtcaagcc attattagat ggtccggacc aaccaaccac tttcaacca 180
 ccaacaagct attggatatt acttgcgcca actgtagagg gcgtaattat ccaaggaaca 240
 aacaatatcg atagatgggt ggctactata ctaattgaac caaacgtgca agcaactaat 300
 agaatataca atccttttgg tcagcaagaa actttatcgg ttgaaaatac ataccagaca 360
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 actgagtata tcaatcacgg attacctccc atacaaaata cgaggaatgt tgtgccagta 660
 tccttatcgg ctagagagat agtgcacaca agagctcaag ttaatgaaga tattgttgtt 720
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<210> 8
 <211> 799
 <212> DNA
 <213> Human rotavirus

<220>
 <223> P1B VP4 gene, partial cds

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 gacatgggga gattaatgat tcaactatag tggaaccagt tttagatggg ccttatcaac 180
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 aaaataattc agataaatgg aaatttttctg aaatgttcaa aggtagtagt cagggtgaat 420
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 cggattttaa taatatatca attataattc attcagagtt ttatatcatt ccaagatctc 600
 aagaatctaa atgtaatgag tatattaata atgggtttgcc accaattcag aatactagga 660
 acgtagttcc attatctcta tcatccagat ctattcaata taggagagca caagttaatg 720
 aagatattac aatttcaaaa acttcattat ggaaggaaat gcaatgtaat agagatatta 780
 taataagatt taaatttgg 799

<210> 9
 <211> 875
 <212> DNA
 <213> Human rotavirus

<220>
 <223> P3 truncated VP4 protein gene, partial cds

<400> 9
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<210> 10
 <211> 1194
 <212> DNA
 <213> rotavirus

<220>
 <223> VP6 strain RF open reading frame

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<210> 11
 <211> 1194
 <212> DNA
 <213> Artificial sequence

<220>
 <223> VP6 strain RF open reading frame, modified sequence

<400> 11						
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<210> 12

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 12

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<210> 13

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 13

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<210> 14

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 14

atggatgtcc	tgtactcctt	gtcaaaaact	cttaaagatg	ctagagacaa	aattgtcgaa	60
ggcacattat	actcccaagt	cagtgatcta	attcaacaat	ttaatcaaat	gataattact	120
atgaatggaa	atgagttcca	aactggagga	attggtaatc	taccgattag	aaattggaat	180
tttgattttg	gattacttgg	aacaactcta	ctaaatttag	atgctaacta	cgtcgaaacg	240
gcccgcgaata	caattgatta	ttttgtagat	tttgtagata	atgtatgtat	ggacgaaatg	300
gtagagagaat	cacaaagaaa	tggaattgca	ccacaatcag	attcacttat	aaagttatca	360
ggcattaaat	ttaaaagaat	aaattttgac	cagtcatcag	aatacataga	gaactggaat	420
ttgcaaaaata	gaagacaaag	aacgggtttt	acatttcata	aaccaaacat	tttcccttat	480
tcagcttcat	tcacgttgaa	cagatcacag	cccgtcatg	ataacctgat	gggtacgatg	540
tggctcaatg	cgggatcaga	aattcaggtc	gctggattcg	actactcatg	tgcaataaac	600
gcgccagcta	atacgcaaca	atttgagcat	attgtacagc	ttcgaagggt	gttgactaca	660
gctacaataa	ctctttttacc	agatgcagaa	agatttagtt	ttccaagagt	gattacttca	720
gctgacggag	cgactacatg	gtacttcaat	ccagtgattc	ttagaccaa	taacgttgaa	780
atagagtttc	tactaaacgg	gcagataata	aatacttacc	aagcaagatt	tggaacgatc	840
atagctagaa	attttgatac	aattagattg	tcatttcagt	tgatgagacc	accaaataatg	900
acaccagcgg	tagcggcggt	atttccaaat	gcgcagccat	ttgaacatca	cgcaacagta	960
ggactcacgc	ttagaattga	atctgcagtt	tgtgaatcag	tacttgccga	cgcaagcgaa	1020
acaatgctag	cacaagtgc	atctgttaga	caagaatacg	cgataccagt	tggaaccagt	1080
tttccaccag	gtatgcagtg	gactgatttg	atcactaact	attcaccatc	tagagaggat	1140
aacttgcagc	gtgtattttac	agtggtttcc	attagaagca	tgcttgtcaa	atga	1194

<210> 15

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 15

atggatgtcc	tgtactcctt	gtcaaaaact	cttaaagatg	ctagagacaa	aattgtcgaa	60
ggcacattat	actcccaagt	cagtgatcta	attcaacaat	ttaatcaaat	gataattact	120

atgaatggaa	atgagttcca	aactggagga	attggtaatc	taccgattag	aaattggaat	180
tttgattttg	gattacttgg	aacaactcta	ctaaatttag	atgctaacta	cgtcgaaacg	240
gcccgcata	caattgatta	ttttgtagat	tttgtagata	atgtatgtat	ggacgaaatg	300
gttagagaat	cacaaagaaa	tggaattgca	ccacaatcag	attcacttat	aaagttatca	360
ggcattaaat	ttaaaagaat	aaattttgac	cagtcatcag	aatacataga	gaactggaat	420
ttgcaaaata	gaagacaaag	aacgggtttt	acatttcata	aaccaaaat	tttcccttat	480
tcagcttcat	tcacgttgaa	cagatcacaa	ccggctcatg	ataacttgat	gggtacgatg	540
tggctcaatg	cgggatcaga	aattcaggtc	gctggattcg	actactcatg	tgcaataaac	600
gcgccagcta	atacgcaaca	atttgagcat	attgtacagc	ttcgaagggt	gttgactaca	660
gctacaataa	ctctttttacc	agatgcagaa	agatttagtt	ttccaagagt	gattacttca	720
gctgacggag	cgactacatg	gtacttcaat	ccagtgattc	ttagaccaaa	taacgttgaa	780
atagagtttc	tactaaacgg	gcagataata	aatacttacc	aagcaagatt	tggaacgatc	840
atagctagaa	attttgatac	aattagattg	tcattttcagt	tgatgagacc	accaaataatg	900
acaccagcgg	tagcggcggt	atttccaaat	gcgcagccat	ttgaacatca	cgcaacagta	960
ggactcacgc	ttagaattga	atctgcagtt	tgtgaatcag	tacttgccga	cgcaagcgaa	1020
acaatgctag	cacaagtgac	atctgttaga	caagaatacg	cgataccagt	tggaaccagt	1080
tttccaccag	gtatgcagtg	gactgatttg	atcactaact	attcaccatc	tagagaggat	1140
aacttgcagc	gtgtattttac	agtggcttcc	attagaagca	tgcttgtcaa	atga	1194

<210> 16

<211> 1348

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence,
with signal peptide

<400> 16

gcgcgcggat	cccaaggccc	aactccccga	accactcagg	gtcctgtgga	cagctcacct	60
agccgccatg	gctccaggct	cccggacgtc	cctgctcctg	gcttttgccc	tgtcttgctt	120
gccctggctt	caggaggctg	gcgccgtgat	ggatgtcctg	tactccctct	caaaaactct	180
taaagatgct	agagacaaaa	ttgtcgaagg	cacactgtac	tccaagtca	gtgatctcat	240
tcagcagttt	aatcagatga	ttattactat	gaatggcaat	gagttccaga	ctggaggcat	300
tggcaatctc	cccattagaa	attggaattt	tgattttgga	ctccttgga	caactctgct	360
caatctggat	gctaactacg	tcgaaacggc	ccgcaataca	attgattatt	ttgtcgattt	420
tgtggataat	gtctgtatgg	acgaaatggt	tagagaatca	cagagaaatg	gcattgcacc	480
acagtcagat	tcacttatca	agctctcagg	cattaaattc	aaacgcatta	attttgacca	540
gtcatcagaa	tacatcgaga	actggaatct	gcaaaataga	agacagagaa	cgggattcac	600
atttcataaa	ccaaacattt	tcccttattc	cgcttccttc	acgctccagc	gctcacagcc	660
cgctcatgat	aacctgatgg	gcacgatgtg	gctcaatgct	ggctcagaaa	tccaggctgc	720
tggattcgac	tactcatgtg	caattaacgc	cccagcta	acgcagcagt	ttgagcatat	780
tgtgcagctt	agaagggtgc	tcactacagc	tacaatcact	cttctgccag	atgcagaaag	840
attcagtttt	cccagagtga	ttacttcagc	tgacggagct	actacatggg	acttcaatcc	900
agtgattctt	agaccaaata	acgttgaaat	tgagtttctg	ctcaacggac	agatcattaa	960
tacttaccag	gcaagatttg	gaacgatcat	cgctagaaat	tttgatacaa	ttagactgtc	1020
atttcagctc	atgagaccac	caaacatgac	accagccgtc	gctgccctct	ttccaaatgc	1080
tcagccattt	gaacatcacg	caacagtggg	actcacgctt	agaattgaat	cagcagtgtg	1140
tgaatcagtc	cttgccgacg	caagcgaaac	aatgctggca	caagtgacat	ctgttagaca	1200
ggaatacgcc	attccagttg	gaccagtttt	tccaccagga	atgcagtggg	ctgatctgat	1260
cactaactat	tcaccatcta	gagaggataa	cctccagcgc	gtgttttacag	tggcatccat	1320
tcgcagcatg	cttgtcaaat	gagcgcgc				1348

<210> 17

<211> 1061

<212> DNA

<213> Human rotavirus

<220>

<223> G9 strain 97CM113 outer capsid protein (VP7)

<400> 17

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ggctttaaaa gagagaattt ccgtctggct agcgggttatt tcctttttaat gtatggtatt    60
gaatatacca caattctaac ctttctgata tcaatagttt tattgaacta tatattaaaa    120
tcactaacta gtgcatgga cttcataatt tatagatttc ttttacttat tgttattgca    180
tcaccttttg ttaaaacaca aaattatgga attaatttac cgatcactgg ctccatggat    240
acagcatatg caaattcatc acagcaagaa acatttttga cttcaacgct atgcttatat    300
tattcctacag aagcgtcaac tcaaattgga gatacggaaat ggaaggatac tctgtcccaa    360
ttattcttga cttaaagggtg gccaaactgga tcagtctatt ttaaagaata caccgatatc    420
gcttcattct caattgatcc gcaactttat tgtgattata atgttgact gatgaagtat    480
gattcaacgt tagagctaga tatgtctgaa ttagctgatt taattctaaa tgaatggtta    540
tgtaacccaa tggatataac attatattat tatcagcaaa cagatgaagc gaataaatgg    600
atatcgatgg gacagtcttg taccataaaa gtatgtccat tgaatacgca gacttttagga    660
ataggttgta ttaccacaaa tacagcgaca tttgaagagg tggctacaag tgaaaaatta    720
gtaataaccg atgttggtga tgggtgtgaac cataaacttg atgtgactac aaatacctgt    780
acaattagga attgtaagaa gttgggacca agagaaaatg tagcgattat acaagtcggt    840
ggctcagatg tgtagatat tacagcggat ccaactactg caccacaaac tgaacgtatg    900
atgcgagtaa attggaagaa atgggtggcaa gttttctata cagtagtaga ttatattaat    960
cagattgtgc aagttatgtc caaaagatca cggtcattaa attcagcagc tttttactat   1020
agggtttgat atatcttaga ttagaattgt atgatgtgac c                   1061

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<210> 18

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G9 strain 02-22 capsid protein VP7 gene

<400> 18

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ggctttaaaa gagagaattt ccgtctggct agcgggttagc tcctttttaat gtatggtatt    60
gaatatacca caattctaac ctttctgata tcaatagttt tattgaacta tatattaaaa    120
tcactaacta gtgcatgga ctttataatt tatagatttc ttttacttat tgttattgca    180
tcattctttg ttaaaacaca aaattatgga attaatttac cgatcactgg ctccatggat    240
acagcatatg caaattcatc acagcaagaa acatttttga cttcaacgct atgcttatat    300
tattcctacag aagcatcaac tcaaattgga gatacggaaat ggaaggatac tctgtcccaa    360
ttattcttga cttaaagggtg gccaaactgga tcagtctatt ttaaagaata cactgatatc    420
gcttcattct caattgatcc acaactttat tgtgattata atgttgact gatgaagtat    480
gattcaacgt tagagctaga tatgtctgaa ttagctgatt taattctaaa tgaatggtta    540
tgtaacccaa tggatataac attatattat tatcagcaaa cagatgaagc gaataaatgg    600
atatcgatgg gacagtcttg taccataaaa gtatgtccat tgaatacgca gacttttagga    660
ataggttgta ttaccacaaa tacagcgaca tttgaagagg tggctacaag tgaaaaatta    720
gtaataaccg atgttggtga tgggtgtgaac cataaacttg atgtgactac aaatacctgt    780
acaattagga attgtaagaa gttaggacca agagaaaatg tagcgattat acaagtcggt    840
ggctcagatg tgtagatat tacagcggat ccaactactg caccacaaac tgaacgtatg    900
atgcgagtaa attggaagaa atgggtggcaa gttttctata cggtagtaga ttatattaat    960
cagattgtgc aagttatgtc caaaagatca cggtcattaa attcagcagc tttttactat   1020
agggtttgat atatcttagg ttagaattgt atgatgtgac ca                   1062

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<210> 19

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G3 strain MaCH09004 outer capsid protein (VP7) gene,
complete cds

<400> 19

ggctttaaaa	gagagaattt	ccgtctggct	agcgggtagc	tccttttaat	gtatgggtatt	60
gaatatacca	cagttttaac	ctttttgata	tcagttatat	tggtgaatta	cgtactcaaa	120
tccttaacta	gaataatgga	ctttattatt	tacagatttc	ttttaattat	agttatatta	180
tcaccactcc	ttaatgcaca	aaattatgga	ataaatcttc	cgattactgg	ctcaatggac	240
acaccatata	cgaactcaac	gcgagaggaa	gtattcctaa	cttcgacttt	atgtttgtat	300
tacccaactg	aagcagcaac	agaaataaat	gataattcat	ggaaggatac	actttctcag	360
ctatttttaa	tcaaaggatg	gccaacagga	tctattttatt	ttaaagatta	tactgatatt	420
gcctcgtttt	cagtcgatcc	acaactgtat	tgtgattata	atttggtatt	aatgaaatat	480
gacgctacac	tgcaactgga	catgtccgaa	ctagcagatt	tgttacttaa	tgagtgggta	540
tgtaatccta	tggaatttac	tttgattatt	tatcaacaaa	ctgatgaggc	aaataaatgg	600
atttcaatgg	gatcatcttg	tactataaag	gtatgtccac	taaatacgca	aacattagga	660
attgggtgtc	taacaactga	tacaaacacg	tttgaagaag	ttgcaacagc	tgaaaaatta	720
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acgattcgaa	attgtaagaa	attaggacca	agggaâaacg	tagcagttat	acaggtaggt	840
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atgcgagtga	attggaagaa	atgggtggcaa	gtgttttata	caatagttga	ctacgtgaat	960
caaattgtgc	aagcaatgtc	caaaagatcg	agatcattaa	attctgctgc	attttactac	1020
agagtataga	tatagcttag	attagaattg	tatgatgtga	cc		1062

<210> 20

<211> 981

<212> DNA

<213> Human rotavirus

<220>

<223> G12 VP7 gene for capsid protein, complete cds

<400> 20

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tatatattaa	aatcaataac	taatataatg	gacttttatca	tatatcggtt	tttactaata	120
gttggtgtca	tgctgccatt	tattaaagct	caaaattatg	gaataaatct	tccaataaca	180
ggttctatgg	ataccgcata	tacaaactcc	acacaacaag	agaattttat	gacttccact	240
ttatgcttat	attatccaag	ttcagtcacg	actgaaataa	ctgaccccgga	ttggacgaac	300
acactgtcac	aacttttcat	gactaaagga	tgcccgacaa	attccgtcta	cttcaagagt	360
tatgctgata	tagcgtcctt	ctctgtagat	ccgcagttat	attgtgatta	caatattgtg	420
ttagtacagt	accaaaattc	attagcgttg	gatgtctcag	aacttgctga	tttaatttta	480
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actgaaagaa	tgatgcgaat	aaattggaaa	aaatgggtggc	aggtgtttta	taccgtagta	900
gattacataa	atcaaatagt	tcaggtaatg	tccaaacgat	caagatcact	aaattcagct	960
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<210> 21

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G3 strain MaCH09404 outer capsid protein (VP7) gene,
complete cds

<400> 21

ggctttaaaa	gagagaattt	ccgtctggct	agcgggtagc	tccttttaat	gtatgggtatt	60
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gaatatacca	cagttttaac	ctttttgata	tcagttatat	tgttgaatta	cgtactcaaa	120
tccttaacta	gaataatgga	ctttattatt	tacagatttc	ttttaattat	agttatatta	180
tcaccactcc	ttaatgcaca	aaattatgga	ataaatcttc	cgattactgg	ctcaatggac	240
acaccatata	cgaactcaac	gcgagaggaa	gtattcctaa	cttcgacttt	atgtttgtat	300
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ctatttttta	tcaaaggatg	gccaacagga	tctattttatt	ttaaagatta	tactgatatt	420
gcctcgtttt	cagtcgatcc	acaactgtat	tgtgattata	atttggtatt	aatgaaatat	480
gacgctacac	tgcaactgga	catgtccgaa	ctagcagatt	tgttacttaa	tgagtgggta	540
tgtaatccta	tggaattac	tttgtattat	tatcaacaaa	ctgatgaggc	aaataaatgg	600
atttcaatgg	gatcatcttg	tactataaag	gtatgtccac	taaatacgca	aacattagga	660
attgggtgtc	taacaactga	tacaaacacg	tttgaagaag	ttgcaacagc	tgaaaaatta	720
gtgattactg	acgttgtaga	tggagtcaat	cataaattga	acgtgacaac	aaacacttgt	780
acgattagaa	attgtaagaa	attaggacca	agggaaaacg	tagcagttat	acaggtaggt	840
ggcccagatg	tgcttgacat	aacagctgat	ccaacgacaa	tgccacaaac	agaaagaatg	900
atgcgagtga	attggaagaa	atgggtggcaa	gtgtttttata	caatagttga	ctacgtgaat	960
caaattgtgc	aagcaatgtc	caaaagatcg	agatcattaa	attctgctgc	attttactac	1020
agagtataga	tatagcttag	attagaattg	tatgatgtga	cc		1062

<210> 22
 <211> 7
 <212> PRT
 <213> Artificial sequence

<220>
 <223> HIV epitope

<400> 22

Arg Thr Pro Lys Ile Gln Val
1 5

<210> 23
 <211> 6
 <212> PRT
 <213> Artificial sequence

<220>
 <223> HIV epitope

<400> 23

Glu Leu Asp Lys Trp Ala
1 5